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APPLICANT : UBE IND LTD;

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TITLE : PRODUCTION OF POROUS HOLLOW FIBER MEMBRANE

ABSTRACT : PURPOSE: To produce a porous hollow fiber membrane preferably usable as a gas exchange membrane for an artificial lung preventing a leak of serum even after use for a long time and a gas separation membrane for oxygen enrichment.

CONSTITUTION: A thermoplastic porous hollow fiber membrane is heat-treated in an atmosphere at the m.p. or pour point of the material of the membrane or above to partially melt the outer surface of the membrane. By this melting, a dense layer is formed in the outer surface and a porous hollow fiber membrane having a double-layered structure composed of porous and dense layers is produced.

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PA - (UBEI ) UBE IND LTD

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AB - J04265131 Membrane with a dense skin layer on its outer surface is produced. A raw thermoplastic porous hollow fibre membrane is heated at a temp. above its melting or flow point, so that the outer surface of the membrane is partially fused and that a dense skin layer free of pores or with smaller pores is developed.

- USE/ADVANTAGE - Used to produce hollow fibre membranes for gas sepn. They are used for artificial lungs or oxygen enrichment. The skin layer has no pores or smaller pores, so that blood plasma is hardly penetrated out of the membrane when it is used as artificial lungs.
- In an example, 'UBE-PP-F109' (RTN, polypropylene, Ube Kosan Corp) was spun into a porous hollow fibre with 230 micron inside dia. 350 micron outside dia. and 0.22 microns average micropore size. The hollow fibre was heated in the air at 180 deg.C for 30 sec. A dense skin layer free of pores was developed. (Dwg.0/0)

CN - R01779-P

DRL - 9240-7

IW - MANUFACTURE POROUS HOLLOW FIBRE MEMBRANE DENSE OUTER SKIN  
HEAT

THERMOPLASTIC POROUS HOLLOW FIBRE MEMBRANE SO SURFACE  
MEMBRANE FUSE

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MEMBRANE FUSE

NC - 001

OPD - 1991-02-21

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PAW - (UBEI ) UBE IND LTD

(C) WPI/Derwent

**TI - Mfg. porous hollow fibre membrane with dense outer skin - by heating thermoplastic porous hollow fibre membrane so surface of membrane is partially fused**